

Claims

- [1] A method for reporting channel quality information for representing the channel quality by subscriber station in the mobile communication system, comprising:
a) receiving uplink radio resource allocation information for transmitting uplink data from a base station;
b) determining whether the channel quality information indicator is included in the allocation information, the channel quality information indicator represents a channel quality information report;
c) generating the channel quality information by measuring the radio channel for communicating with the base station, when the channel quality information indicator is included in the allocation information; and,
d) including the channel quality information to the uplink data and transmitting the uplink data to the base station through the radio resource corresponding to the allocation information.
- [2] The method for reporting the channel quality information by the subscriber station of claim 1, wherein the channel quality information indicator is a piggyback indicator.
- [3] The method for reporting the channel quality information by the subscriber station of claim 1, wherein the uplink data includes data to be transmitted, and a header having information for the data and the subscriber station, the uplink data in (d) is transmitted by adding a subheader including the channel quality information to the header of the uplink data.
- [4] The method for reporting the channel quality information by the subscriber station of claim 3, wherein the subheader including the channel quality information is added in advance to residual subheaders when a plurality of subheaders is added to the header of the uplink data.
- [5] The method for reporting the channel quality information by the subscriber station of claim 1, wherein the allocation information includes the channel quality information indicator, and the radio channel quality is measured to generate the channel quality information when the CQI indicator is set into a pre-determined value for a request of the CQI, in (c).
- [6] A method for reporting channel quality information for representing a channel quality by a subscriber station in a mobile communication system, comprising:
a) allocating an uplink radio resource to the subscriber station having data to be transmitted to the uplink;
b) adding a channel quality information indicator for requesting the channel quality information to the uplink radio resource allocation information; and

- c) transmitting the uplink radio resource allocation information including the channel quality information indicator to the subscriber station, and requesting channel quality information.
- [7] The method for the reporting channel quality information by the subscriber station of claim 6, wherein the channel quality information indicator is a piggyback indicator, and the channel quality information indicator is set by a pre-determined value for a request of the channel quality information indicator in (b).
- [8] The method for reporting the channel quality information by the subscriber station of claim 6, further comprising:
receiving the uplink data from the subscriber station through the radio resource set according to the uplink radio resource allocation information;
extracting the channel quality information from the uplink data; and
allocating the downlink radio resource to the subscriber station based on the channel quality information.
- [9] A method for requesting and reporting channel quality information in a mobile communication system wherein a base station and a subscriber station are coupled by a mobile network, comprising:
a) controlling the base station to add a channel quality information indicator for requesting a channel quality information report to an uplink radio resource for the subscriber station having the data to be transmitted to the uplink, and transmit the uplink radio resource allocation information to the subscriber station;
b) controlling the subscriber station to measure the radio channel quality according to the channel quality information indicator, and generate the channel quality information ; and
c) controlling the subscriber station to include the channel quality information to the uplink data and transmit the uplink data to the base station through the radio resource according the allocation information.
- [10] The method for the subscriber station to report and request the channel quality information of claim 9, further comprising:
controlling the base station to allocate a downlink radio resource to the subscriber station based on the channel quality information included in the uplink data provided by the subscriber station.
- [11] The method for the subscriber station to report and request the channel quality information of claim 9, wherein the request and report method is applicable to the wireless portable internet system.
- [12] A base station apparatus for requesting channel information in a mobile communication system, comprising:
a base station resource controller for including a channel quality information

indicator for requesting channel quality information report from uplink radio resource allocation information;

a digital signal transmitter for performing adaptive modulation and coding on the uplink radio resource allocation information to generate digital signals; and
an analog signal transmitter for converting the digital signals into analog signals and transmitting the analog signals to the subscriber stations,

[13] The base station of claim 12, wherein the base station resource controller includes:

an uplink resource allocator for allocating the uplink radio resource to the subscriber station to generate the uplink radio resource allocation information; and

a channel quality requestor for generating channel quality information indicator to the request channel information from the subscriber station,
wherein the uplink resource allocator transmits the uplink radio resource allocation information provided with the channel quality information indicator to the digital signal transceiver.

[14] The base station of claim 13, further comprising a downlink resource allocator for allocating a downlink radio resource to the subscriber station based on the channel quality information included in uplink data transmitted from the subscriber station according to the channel quality information indicator.

[15] A subscriber station for reporting channel quality information in a mobile communication system, comprising:

an allocated resource checker for receiving uplink radio resource allocation information from a base station, and checking a radio resource set for the subscriber station by analyzing the allocation information;

a channel quality reporter for generating the channel quality information by measuring the channel quality so as to communicate with the base station when the uplink radio resource allocation information includes a channel quality information indicator for requesting channel quality information;

an uplink data generator for generating uplink data to be transmitted to the base station, and adding the channel quality information to the uplink data; and
a transmitter for transmitting the uplink data to the base station through the radio resource conformed by the allocated resource checker.

[16] The subscriber station of claim 15, wherein the uplink data includes data to be transmitted, and a header having information on the data and the subscriber, and the uplink data generator adds the subheader including the channel quality information to the header of the uplink data.